

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An immunomodulator A construct which comprises an antigen-presenting-cell (APC) targeting molecule coupled to an immunomodulatory antigen, wherein said APC targeting molecule mimics the superantigen SMEZ-2 but does not include a fully functional T-cell receptor binding site contains a mutant of superantigen SMEZ-2 having the amino acid sequence of SEQ ID NO:1, wherein the mutant has a mutation at one or more positions of 18, 42, 75, and 182 in SEQ ID NO:1 and wherein in use the construct can bind to Class II MHC molecules.

2. (Cancelled)

3. (Currently Presented) An immunomodulator The construct of claim 1, wherein the mutant of superantigen which comprises SMEZ-2 has a mutation at position 18 in SEQ ID NO:1, or C at position 42 (D42C) in SEQ ID NO:1 having one or more mutations at positions 18, 42, 75 and 182 of the amino acid sequence SEQ ID NO:1 coupled to an immunomodulatory antigen.

4. (Currently Amended) An immunomodulator as claimed in claim 3 The construct of claim 3, wherein the mutant of superantigen SMEZ-2 has C at position 42 (D42C) in SEQ ID NO:1 one or more mutations chosen from the group consisting of:
Y18A;
W75L;
K182Q; and
D42C.

5. (Withdrawn and Currently Amended) An immunomodulator The construct of claim 1, wherein the mutant of superantigen which comprises SMEZ-2 has A at position 18 (Y18A) in SEQ ID NO:1, C at position 42 (D42C) in SEQ ID NO:1, L at position 75 (W75L) in SEQ ID NO:1, and Q at position 182 (K182Q) in SEQ ID NO:1 having the mutations of Y18A, W75L, K182Q, and D42C, coupled to an immunomodulatory antigen.

6. (Withdrawn and Currently Amended) The construct of claim 1, wherein the mutant of superantigen An immunomodulator which comprises SMEZ-2 has C at position 42 (D42C) in SEQ ID NO:1, L at position 75 (W75L) in SEQ ID NO:1, and Q at position 182 (K182Q) in SEQ ID NO:1 having the mutations of W75L, K182Q, and D42C, coupled to an immunomodulatory antigen.

7. (Currently Amended) An immunomodulator The construct of claim 1, wherein the APC targeting molecule is which comprises the defective TeR-binding SMEZ-2 coupled to ovalbumin.

8. (Withdrawn and Currently Amended) An immunomodulator The construct of claim 1, wherein the APC targeting molecule is which comprises the defective TeR-binding SMEZ-2 coupled to tetanus toxoid (TT) or a peptide thereof.

9. (Withdrawn and Currently Amended) An immunomodulator The construct of claim 1, wherein the APC targeting molecule is which comprises the defective TeR-binding SMEZ-2 coupled to LCMV peptide.

10. (Currently amended) An immunomodulator as claimed in The construct of claim 1, wherein the coupling between the antigen-presenting-cell (APC) targeting molecule and the immunomodulatory antigen is reversible.

11. (Currently amended) An immunomodulator as claimed in The construct of claim 1, wherein the immunomodulatory antigen is a protein or a peptide.

12. (Currently amended) A pharmaceutical composition comprising an immunomodulator according to the construct of claim 1 and one or more pharmaceutically acceptable carriers, adjuvants, excipients and/or solvents.

13. (Currently amended) A vaccine comprising an immunomodulator according to the construct of claim 1.

14. (Withdrawn and Currently Amended) A method of therapeutic or prophylactic treatment of a disorder which requires the induction or stimulation of the immune system, comprising the administration to a subject requiring such treatment of an immunomodulator or of a pharmaceutical composition according to the construct of claim 1.

15. (Withdrawn) A method as claimed in claim 14 wherein the disorder is selected from the group consisting of bacterial, viral, fungal or parasitic infection, autoimmunity, allergy and/or pre-neoplastic transformation.

16. (Cancelled)

17. (Withdrawn and Currently amended) A method of preparing an immunomodulator the construct of claim 1 comprising the steps of:

a. introducing a mutation at one or more positions of 18, 42, 75, and 182 in SEQ ID NO:1 to produce a mutant of superantigen SMEZ-2, a modification and/or a deletion into the T-cell binding site of an antigen presenting cell (APC) targeting molecule which is structurally a SMEZ-2 superantigen, and

b. coupling thereto the mutant of SMEZ-2 to an immunomodulatory antigen.

18. (Currently Amended) A construct An immunomodulator prepared by: in accordance with a method of claim 17

a. introducing a mutation at one or more positions of 18, 42, 75, and 182 in SEQ ID NO:1 to produce a mutant of superantigen SMEZ-2, and
b. coupling the mutant of SMEZ-2 with an antigen.

19. (Currently Amended) A superantigen, which has having the amino acid sequence of SEQ ID NO:1 but for a mutation one or more mutations present at one or more positions of 18, 42, 75 and 182 in SEQ ID NO:1.

20. (Currently Amended) A superantigen as claimed in claim 19, wherein the superantigen has mutations are chosen from the group consisting of:

Y18A;
W75L;
K182Q; and or
D42C.

21. (Withdrawn) A superantigen SMEZ-2 having the amino acid sequence of SEQ ID NO:2.

22. (Withdrawn) A superantigen SMEZ-2 having the amino acid sequence of SEQ ID NO:3.

23. (Withdrawn and Currently Amended) A nucleic acid encoding any one of the superantigens of [[22]] claim 18.

24. (Withdrawn) A nucleic acid construct comprising at least a nucleic acid encoding any one of the superantigens of claim 18.

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25. (Withdrawn) A nucleic acid construct comprising at least a nucleic acid encoding any one of the superantigens of claim 19.

26. (Withdrawn) A nucleic acid construct comprising at least a nucleic acid encoding any one of the superantigens of claim 20.

27. (Withdrawn) A nucleic acid construct comprising at least a nucleic acid encoding any one of the superantigens of claim 21.

28. (Withdrawn) A nucleic acid construct comprising at least a nucleic acid encoding any one of the superantigens of claim 22.

29. (New and Withdrawn) The construct of claim 3, wherein the mutant of superantigen SMEZ-2 has A at position 18 (Y18A) in SEQ ID NO:1